

PROGRESS IN EYE RESEARCH



1963 ANNUAL REPORT



RESEARCH TO PREVENT BLINDNESS, INC.

THE MIRACLE OF SIGHT...



Through our eyes . . . through our miraculous power to see . . . comes eighty percent of our knowledge.

Through our eyes we respond to the substance of life, to the appearance of objects and beings. Through our eyes we read the wisdom of the ages, preserved in the written word. Through our eyes we feast upon the beauty of the sun's rise and set, marveling at the changes of seasons and at the ever-varying pattern of life.

Every day there are new things to see, new words to read, new joys to behold. Yet every day and every week and every year more and more among us are being robbed of sight.

What do we know about blindness?

What are we doing to prevent it?

BETWEEN SIGHT
AND BLINDNESS LIES A
HUGE GAP IN HUMAN
KNOWLEDGE THAT CAN
ONLY BE CLOSED THROUGH
SCIENTIFIC RESEARCH.
TO FILL THIS GAP
IS THE GOAL OF
**RESEARCH TO PREVENT
BLINDNESS, INC.**

ON THE COVER: Surgeons repair a detached retina using cryosurgery—a new surgical freezing technique developed through RPB support. While seeking to find and eradicate the causes of blindness, eye researchers continue to work toward the development of more effective methods of treatment. (Photo by Bernard Cole, courtesy of Clinical Trends, published for Burroughs Wellcome & Co., Inc.)

...THE TRAGEDY OF BLINDNESS

BLINDNESS IS ON THE RISE.

Between 1940 and 1960, the general population of the United States rose by 36 percent; the *blind* population rose by some 67 percent.

In the 1940's, there were about 6,700 new cases of blindness a year in this country; new cases this year will total more than 30,000.

Out of every 100 cases of blindness, only about five are caused by accidents and another four by poisoning. Most blindness is caused by diseases that science doesn't understand . . . doesn't yet know how to prevent and doesn't yet know how to cure.

A million Americans over 40 years of age are afflicted with a blinding disease called glaucoma and don't know it. Many don't even realize such a disease exists.

More than 3,500,000 Americans have some permanent, non-correctable visual defect. Of these there are an estimated 1,000,000 who cannot read these words even with the aid of glasses. Yet few understand the meaning of such terms as *cataract* or *detached retina* or *diabetic retinopathy*.

Some blinding diseases strike before birth; some in early childhood. There are blinding conditions of adolescence and early adulthood that rob the student of sight; there are progressive diseases that take their toll of those in the prime of life; there are degenerative diseases that blind the elderly.

As more babies survive infancy . . . as more people outlive the contagious diseases and fall prey to degenerative conditions . . . an ever-increasing percentage of our population is denied the miracle of sight.

RESEARCH TO PREVENT BLINDNESS, INC.

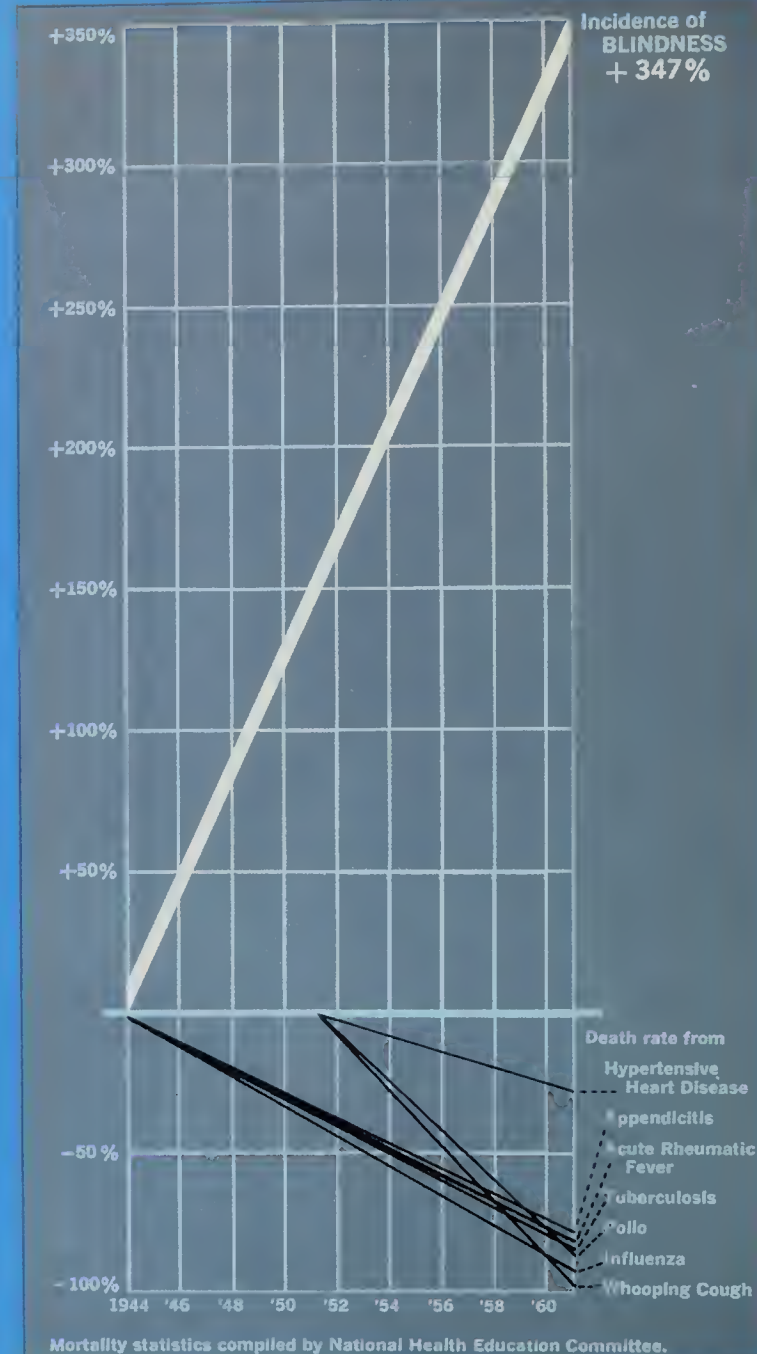
What it Is—What it Does

RPB's purpose as a national research foundation is to support, develop and expand the efforts of those who seek scientific knowledge of the human eye and the causes of blindness. Founded in 1960, it has won increasing recognition from the scientific community for the effectiveness of its support and the efficiency with which it moves to meet realistic objectives.

RPB is unique in many ways. It seeks to do what has not been done by any other voluntary health organization. While more than 800 organizations in this country serve the needs of those already blind, RPB acts solely in support of scientific research. Its aim is to provide answers to age-old questions regarding the mystery of sight, so that the causes of blindness may be found and eliminated. Its programs are planned with the advice and guidance of a scientific panel composed of eminent physicians and scientists who represent a broad cross-section of the medical sciences. With their assistance, RPB works to meet needs and opportunities in eye research which have long been neglected for want of concentrated interest and support.

RPB is unique in the methods it has employed in developing its role as a catalyst between the scientist and potential sources of financial support for his work. It does not insist upon holding the purse-strings of philanthropic support of eye research, but seeks to guide necessary funds into those areas where it will do the most good at the least cost. As a result, it has raised more than \$6,000,000 from private sources for eye research purposes since 1960. Of this amount, more than \$3,500,000 has been given directly by donors to institutions in support of RPB-sponsored projects. The remaining sum has been given to the organization. Its overall fund raising cost has amounted to about one percent, an enviable record for a voluntary health organization. Operating and fund-raising costs are paid through contributions from its own Board of Trustees, freeing all other contributions entirely for research. In addition to stimulating voluntary contributions to eye research, it has provided stimulus for increased government allocation of funds to this vitally important area of scientific investigation.

RPB is pioneering new concepts in providing laboratory space, manpower, equipment and flexible funds for the fight against blindness. But its work has just begun. The eye research gap is a large one. The effort to close the gap merits vastly increased interest and support by all who are in a position to help.



INCREASED INCIDENCE OF BLINDNESS

Scientific research has brought about a new era in which Americans live longer, protected against once-deadly diseases. But, as the life span increases, more people are afflicted with blinding diseases. To prevent blindness, the causes of these diseases must be found and eradicated. This can be done only through vastly intensified programs of eye research.

SURVEYING THE RESEARCH GAP...PLOTTING A COURSE

The existence of a serious gap in research was disclosed by RPB three years ago when a preliminary survey revealed overall deficiencies in the amount of space, manpower, equipment and money available for scientific studies in ophthalmology. Unlike other areas of medical research which were being attacked successfully, eye research was largely relegated to a minor position at most institutions. There was no definitive information as to the nature of ongoing research, its bottlenecks, its needs and opportunities for potentially productive efforts to step up the attack against blindness.

In 1963, RPB moved ahead in conducting the first comprehensive nationwide survey of the status of ocular research. The primary goal of the study launched in 1962 was to amass a reservoir of factual information from which RPB could blueprint a realistic program of research support. As the survey progressed it became apparent that the knowledge that had been gained as to both the substance and logistics of eye research would serve not only RPB, but all potential sources of support—private and governmental—and, indeed, the ophthalmic researcher and the institutions at which he carried on his work.

Dr. Thomas D. Duane, Chairman of the Department of Ophthalmology at Jefferson Medical College, Philadelphia, is conducting the survey. Dr. C. J. Van Slyke, a retired Deputy Director of the National Institutes of Health, serves as consultant, with RPB's eminent Scientific Advisory Panel providing guidance and advice. By the end of 1963, RPB had expended more than \$47,000 of an original \$130,000 commitment to carry out the survey, tabulate its findings and publish and disseminate a complete report.

During the year, Dr. Duane travelled more than 50,000 miles in making per-

sonal site-visits to more than 100 institutions and research laboratories across the nation. Interviews were conducted with more than 600 medical school deans, administrators, department heads and researchers, including eminent leaders in ophthalmology and eye research. Meanwhile, institutions responded to detailed questionnaires as to the logistics of their programs—the number and type of personnel involved in eye research, the space and equipment available for their work, the amounts and sources of support. Present and projected needs were stated. Opinions were expressed. Opportunities—the potential for progress—were discussed. The Science Information Exchange of the Smithsonian Institute provided summaries of research related to the eye. Pertinent literature was thoroughly studied.

From these sources has come a massive accumulation of factual data, which are being compressed into a report entitled "Ophthalmic Research—U.S.A." to be completed in 1964 and presented at a scientific symposium in October.

The survey comes at a strategic time in the development of research to prevent blindness. The problem of eye research support must be faced and faced quickly, in view of the steadily rising incidence of serious visual defects and blindness. The survey will serve a worthwhile purpose by setting forth the hard, cold facts for both public and professional discussion. Already it has fanned the spirit of enthusiasm and optimism among eye researchers who have too long labored in the face of apathy and neglect. For RPB, it will provide the factual substance for the future growth of its programs to equip the eye researcher with the facilities, the manpower and the funds that have long been denied him in the fight to conquer blindness.

RPB provides active leadership in identifying and meeting eye research needs and opportunities.

**RESEARCH TO PREVENT BLINDNESS, INC.
UNRESTRICTED GRANT RECIPIENTS**

Institution by State	1963 Grants	Total Granted Through 1963
CALIFORNIA		
Francis I. Proctor Foundation	\$ 5,000	\$ 20,000
University of California	5,000	20,000
University of Calif., Los Angeles	5,000	20,000
CONNECTICUT		
Yale University	5,000	10,000
FLORIDA		
University of Florida	5,000	10,000
University of Miami	5,000	20,000
ILLINOIS		
University of Chicago	5,000	20,000
INDIANA		
Indiana University	5,000	20,000
IOWA		
University of Iowa	5,000	20,000
KENTUCKY		
University of Louisville	5,000	5,000
LOUISIANA		
Tulane University	5,000	10,000
MARYLAND		
Johns Hopkins University (Wilmer Institute of Ophthalmology)	5,000	20,000
MASSACHUSETTS		
Harvard University	5,000	20,000
(Howe Laboratory of Ophthalmology)		
Retina Foundation	5,000	20,000
MICHIGAN		
Kresge Eye Institute	5,000	20,000
University of Michigan	5,000	20,000
MINNESOTA		
University of Minnesota	5,000	20,000
MISSOURI		
Washington University	5,000	20,000
NEW YORK		
Columbia University	5,000	20,000
Cornell University	5,000	20,000
Eye Bank for Sight Restoration		10,000
New York University	5,000	20,000
OREGON		
University of Oregon	5,000	20,000
PENNSYLVANIA		
University of Pennsylvania	5,000	20,000
Wills Eye Hospital	5,000	5,000
TEXAS		
Baylor University	5,000	5,000
VIRGINIA		
Medical College of Virginia	5,000	5,000
	<u>\$130,000</u>	<u>\$440,000</u>

CLOSING THE RESEARCH GAP

Creative research calls for maximum flexibility and freedom. Yet most medical researchers must depend largely upon project grants for support—money earmarked for specific projects. Its use is limited to purposes clearly stated when the request for funds is granted. If a need or an opportunity arises outside the scope of the grant, a new request normally must be initiated. Time is wasted. Opportunities may pass. An idea may be lost. An unmet need may seriously delay a potentially fruitful program.

RPB has pioneered in giving the eye researcher the widest possible latitude in the development of his program. Since the organization was founded it has awarded \$440,000 to 27 institutions in the form of unrestricted grants—money which the eye research director may use at his own discretion to further the work of his department. These are given through annual awards of \$5,000 to selected institutions, and the money must be spent within the year.

Research directors have consistently termed these funds the most valuable money they receive, dollar for dollar. RPB grants are serving a wide variety of purposes, filling the gap in creative eye research, meeting unexpected needs, turning immediate opportunities to maximum advantage. The development of the laser in the field of ophthalmology was advanced many months through the effective use of an unrestricted RPB grant. Pilot studies in cryology—an exciting new freezing technique in eye surgery—were instituted with such funds. Often the RPB grant is used as a revolving fund which is reimbursed after each use, and employed again and again as needs arise. The effectiveness of RPB's concept is evident in the brief summaries of ongoing work illustrated in pages 7 through 15 of this report. During 1963, RPB's unique grants program was sparking new ideas, stimulating the development of a growing nationwide attack against blinding diseases.

THROUGH UNRESTRICTED GRANTS

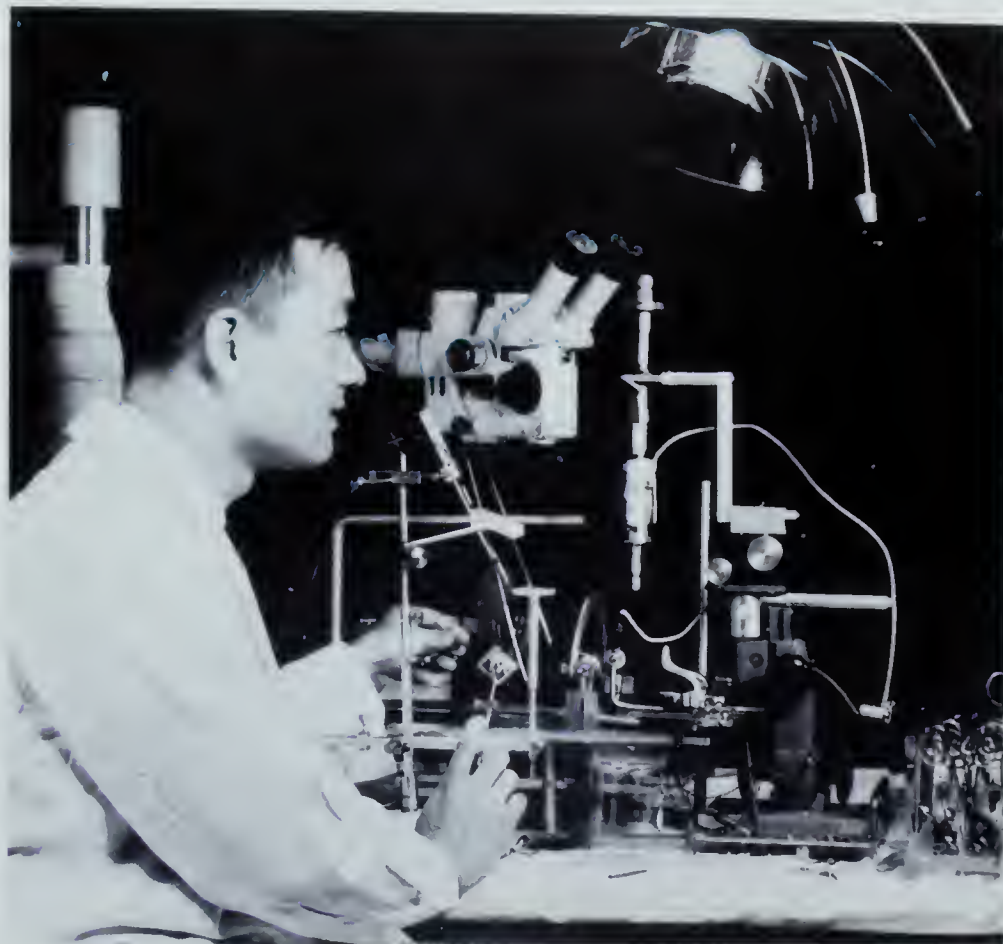
NEW YORK UNIVERSITY

RPB's unrestricted grant made possible the special equipment shown here, being used by Dr. Satoshi Ishikawa, a Japanese investigator spending two years at New York University Medical Center engaged in microelectrode studies of extraocular muscle. This project, concerned with the effect of various conditions, including myasthenia gravis, on muscle fibers of the eye, will employ electronic computers to measure changes not visible by standard techniques.

UNIVERSITY OF MICHIGAN

RPB's unrestricted grant was used to support basic research into eye pathology, employing a new staining technique to study nerves of the eye.

This research is also significant in its potential application to future study of the brain, brain tumors and the central nervous system.



RPB adds freedom and flexibility to eye research through unrestricted grants.

EYE RESEARCH PROGRESS 1963



CORNELL UNIVERSITY

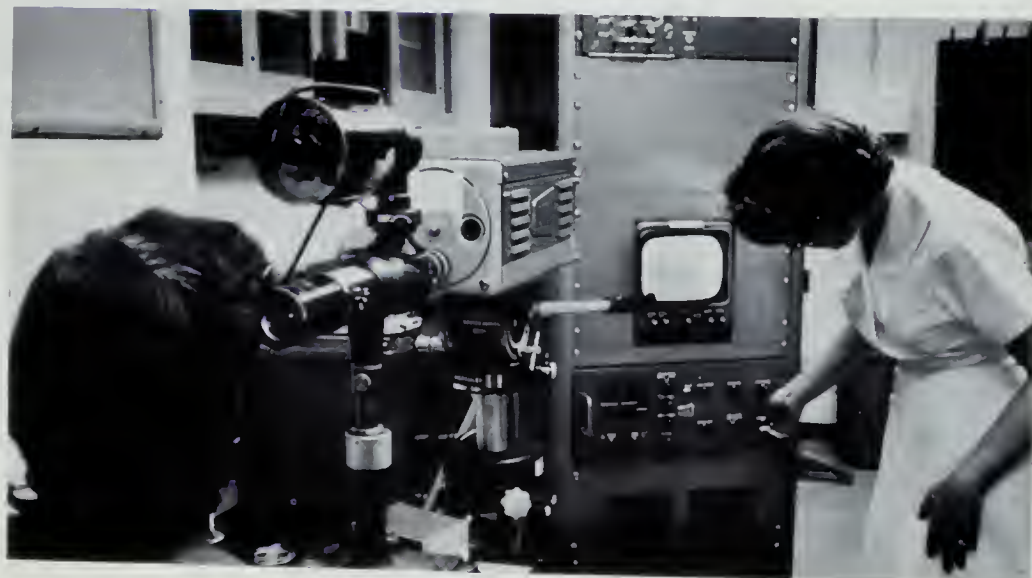
RPB's unrestricted grant was used in support of the development of a new cryosurgical device for the re-attachment of detached retinas. The instrument is shown here in actual use during an operation. Its aim is to increase safety and prevent damage to surrounding tissues through the use of freezing techniques. It is now being used experimentally to treat retinoblastoma, and further application to glaucoma and certain inflammatory intraocular diseases is being studied. RPB's support made possible pilot studies in cryosurgery by making available unrestricted funds to be used by researchers in just such a pioneering effort.

INDIANA UNIVERSITY

RPB's unrestricted grant supported, wholly or in part, a variety of basic eye research investigations including biochemical studies of subretinal fluid; work on the prevention of the oculo-cardiac reflex in children; studies of the biochemical changes in the vitreous of rabbit eyes stored in the same manner as human eyes in eye banks; experiments on transplanting rabbit corneas into cats; and studies related to gouty scleritis, glaucoma and uveitis.

UNIVERSITY OF CHICAGO

RPB's unrestricted grant was used to help finance pilot research projects and to help equip a new laboratory which integrates ophthalmic pathology, biochemistry, pharmacology and electrophysiology. RPB funds also helped in sending a senior trainee to the Mission Hospital in West Pakistan where, in a six-week period, he assisted in carrying out some 200 cataract extractions. Here a television ophthalmoscope purchased with help of RPB funds is experimentally used to diagnose eye conditions.



RPB stimulates action by private and government sources in support of eye research.

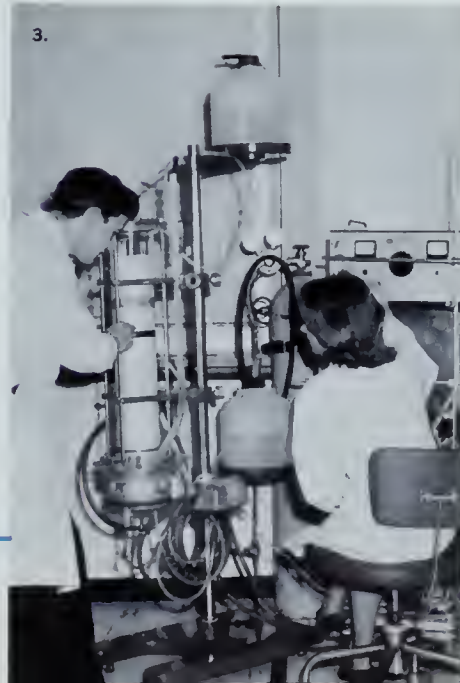
1. JOHNS HOPKINS UNIVERSITY

RPB's unrestricted grant was used by The Wilmer Institute to purchase special equipment for work being done in pleoptics and amblyopia in cross-eyed children by Dr. Gunter van Noorden (photo) and to support work in electroretinography and other eye research studies.



2. YALE UNIVERSITY

RPB's unrestricted grant made possible, without costly delay, space and facilities to expand work in microchemistry by Dr. Rufus Howard (photo) and his associates, who are conducting metabolic studies on a cellular level of all eye tissues. The equipment purchased with RPB funds also makes it possible for house staff, medical students and even undergraduates to be taken into the laboratory for research training purposes—an important step forward for a young and growing eye research program.

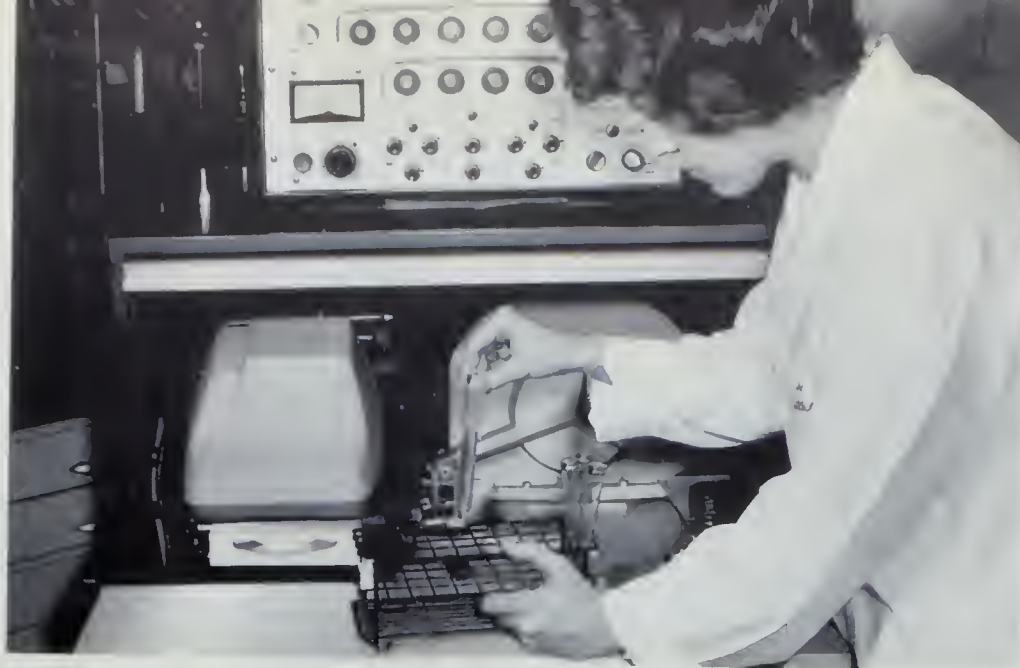


3. RETINA FOUNDATION, BOSTON

RPB's unrestricted grant was used to help purchase this electrophoresis column, here operated by Dr. David A. Swann and Miss Gunnel Jutheden. The equipment is used to separate the macromolecular components of ocular tissues—vitreous, cornea and lens—as part of research on connective tissues.

4. TULANE UNIVERSITY

RPB's unrestricted grant was used in equipping a new laboratory of histochemical pathology in a new wing of the medical school. Here Dr. Gustav C. Bahn, in charge of the laboratory, and a technician, Mrs. Liliias Gagnet, place a specimen in the cryostat, purchased with RPB funds, for preparation of frozen sections for pathological examination. The new laboratory will permit initiation of a wide variety of research studies.

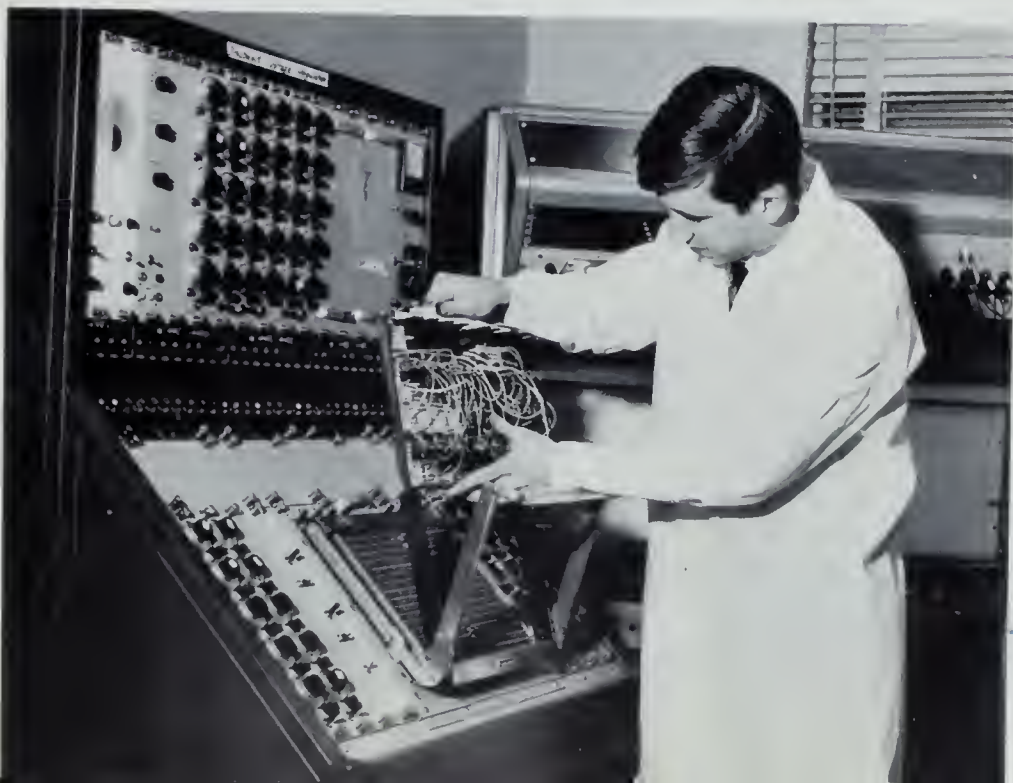


UNIVERSITY OF MINNESOTA

RPB's unrestricted grant prevented at least a six months' delay in important eye research projects by making possible the purchase of essential equipment. These included a two-channel auto gamma spectrometer, shown here being used by Colleen Flath in fundamental studies of the lens as part of a research program concerned with control of intraocular pressure; and a cryostat microtome and microtome blade sharpener, used in work dealing with the effect of high intensity light on the retina.

COLUMBIA UNIVERSITY

RPB's unrestricted grant was used to pay for a new cold room to be used for virological studies in the research laboratories of the Institute of Ophthalmology at The Presbyterian Hospital.



KRESGE EYE INSTITUTE, DETROIT

RPB's unrestricted grant was used to help recruit career specialists in eye research by giving summer employment to promising college students between their sophomore and junior years. David Evans, shown here readying an analog computer to solve problems related to aqueous humor dynamics, became interested in eye research through such summer employment. Now graduated from Notre Dame University, he is studying for a doctor's degree in biochemistry at Wayne State University while working thirty hours a week in the laboratory under a fellowship provided by the Kresge Eye Institute.

1. UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

RPB's unrestricted grant represented a significant contribution toward development of a laboratory of immuno-ophthalmology at the San Francisco General Hospital, where studies involve the role of the immune mechanism in inflammatory diseases of the eye.

Here, bundled in a coat to protect him against a temperature of 4 degrees centigrade, the program's director, Dr. S. B. Aronson, prepares a tissue sample for study, using equipment purchased with RPB funds.



2. WASHINGTON UNIVERSITY, ST. LOUIS

RPB's unrestricted grant was used in continuing studies of families of glaucoma patients, from which have come evidence that glaucoma is inherited as a recessive rather than a dominant trait.

Tissue culture studies are also being carried out on the effect of steroids on ocular structures.

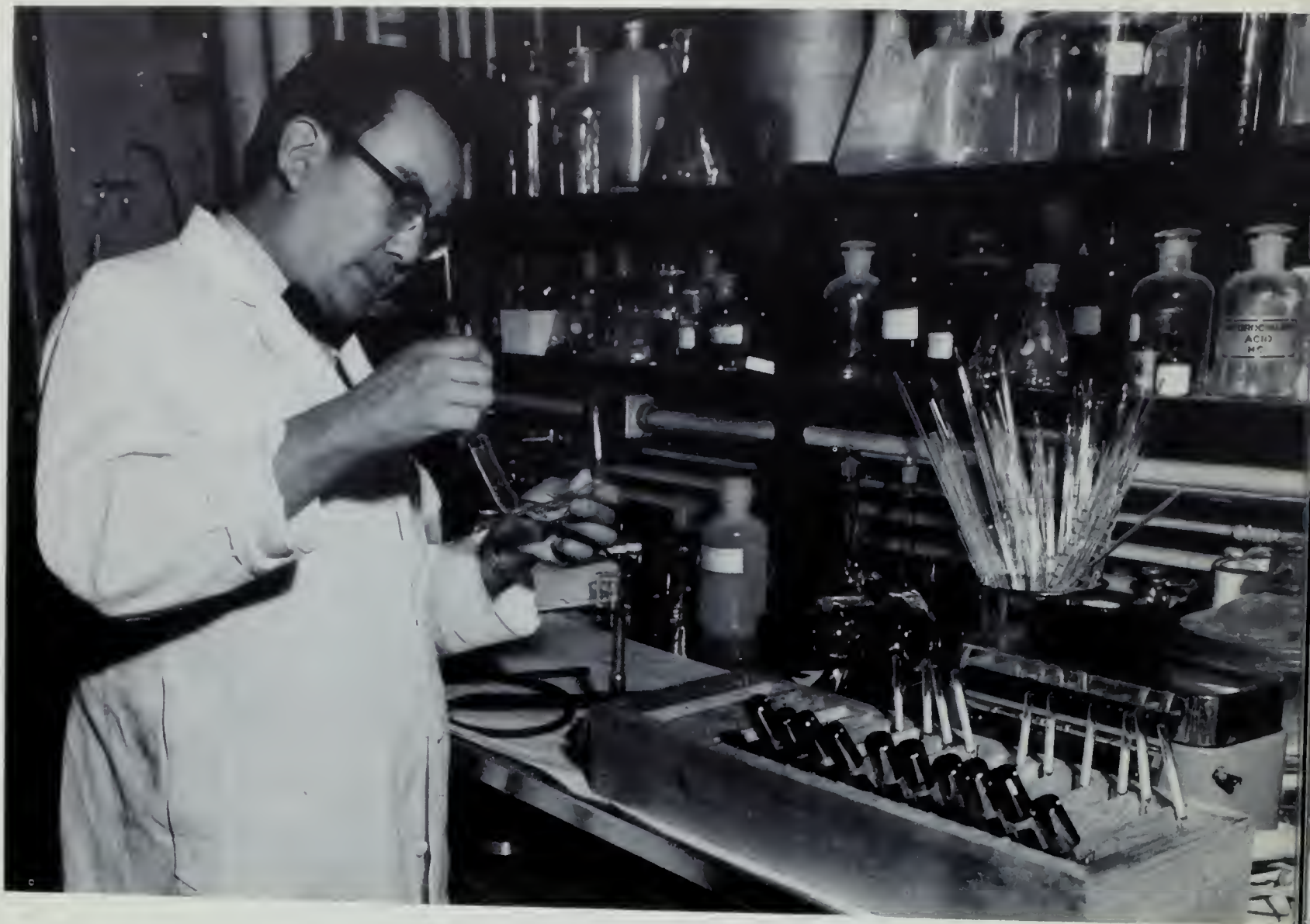
Here a blood relative of a glaucoma victim is given a visual field test.



UNIVERSITY OF MIAMI

RPB's unrestricted grant was used to modify a fundus camera and equip a darkroom in order to study, through microphotography, the flow of fluorescein through the retinal vessels, thus identifying retinal changes unrecognizable by any other technique. This method is proving useful in differential diagnosis of malignant melanoma, metastatic tumor, inflammatory lesions and other eye conditions.

RPB unrestricted grants provide funds for eye research equipment.



FRANCIS I. PROCTOR FOUNDATION, SAN FRANCISCO

RPB's unrestricted grant helped support the work of Dr. Lawrence Rose in using a fluorescent antibody technique in diagnostic studies of viral eye infections, including trachoma and conjunctivitis.

RPB's funds also aided in development of an eye research library and a teaching and research collection of stereophotographs of external eye conditions, and experiments in chemotherapy of viral and fungal eye infections of rabbits.



HARVARD UNIVERSITY — MASSACHUSETTS EYE AND EAR INFIRMARY

At the Howe Laboratory of Ophthalmology, Dr. Jin H. Kinoshita (left) places a crystalline lens in a culture medium. The Harvard laboratory, long a major center for eye research, has been an annual recipient of RPB's unrestricted research grants for the past four years. In 1963, the RPB grant helped launch Dr. Robert Reinecke in a career of academic ophthalmology with emphasis on research administration—an important and heretofore neglected aspect of training for future leaders in eye research.



UNIVERSITY OF OREGON

RPB's unrestricted grant was used to enable Dr. Marvin C. Hines to initiate basic biochemical studies of the proteins in normal lenses and in those affected by cataracts. Dr. Hines, a newcomer to eye research, is shown here with a fraction collector, purchased with RPB funds, which permits him to collect and maintain separation of the fractions of the lens under study. Working with RPB funds, Dr. Hines was able to develop necessary data to substantiate his application for a substantial grant from the National Institutes of Health, which is now supporting continued work in this project.

UNIVERSITY OF PENNSYLVANIA

RPB's unrestricted grant was used in support of several significant projects, including the work of Dr. Harold G. Scheie and Dr. Brooks J. Poley on the affect of phenol burns on the cornea. Dr. Poley is shown at left in photo below, administering medication to the eye of a rabbit. Other projects supported were a study of the affect of ointment bases in the anterior chamber of the eye, basic research aimed at increased understanding of circulation pathways in the retina, and an attack on the problem of vascular changes in the retina resulting from allergic reactions, diabetic reactions and abnormal glucose tolerance.



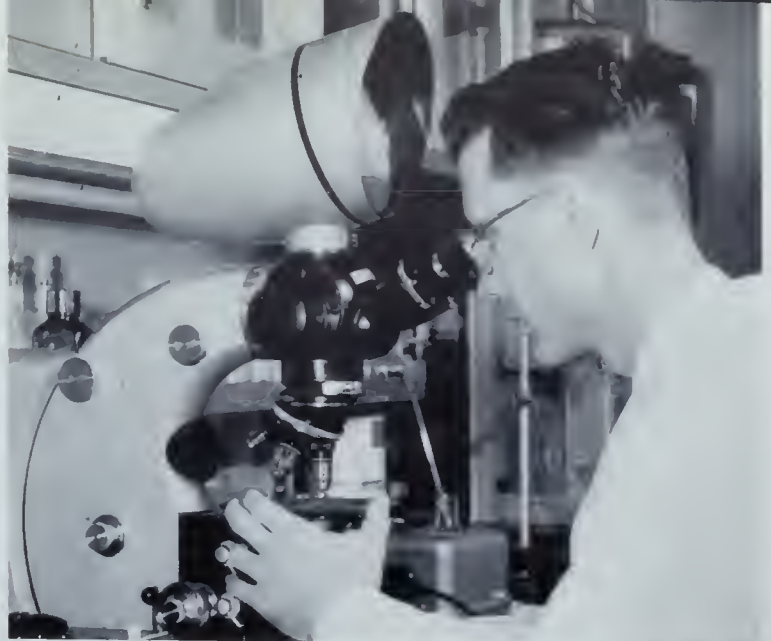
RPB unrestricted grants provide funds for eye research personnel.



RPB meets eye research emergencies

UNIVERSITY OF CALIFORNIA, LOS ANGELES

RPB's unrestricted grant made possible the appointment of Dr. Thomas H. Pettit to the full time faculty to establish and direct a program in ophthalmic biochemistry and immunology, including investigation of causes of uveitis and work on a reliable diagnostic test to assist in the management of herpes simplex infections of the eye. Once the program was established other sources of support were obtained for the work, and the university was able to reuse RPB's grant to meet new opportunities in research.



UNIVERSITY OF FLORIDA

RPB's unrestricted grant helped finance preliminary studies by Dr. Richard Copenhaver on objective visual field testing, which for the first time makes possible reliable recording of the specific response of the brain to small visual stimuli. This exciting development opens the way for intensive basic research on the visual system. It will serve also in testing the visual function in patients who cannot cooperate, such as those with severe brain disease or under anesthesia. Dr. Copenhaver is shown wearing an electrode on the back of his head, while Dr. Nathan Perry, a psychologist, operates filters and computers to read his visual response. RPB's grant also helped further the research careers of a technician and a graduate student, and helped support research related to the preservation of tissue in corneal transplantation.

RPB SPECIAL AND EMERGENCY GRANTS

ALBERT EINSTEIN COLLEGE OF MEDICINE, YESHIVA UNIVERSITY, N. Y.

It is RPB's philosophy that no worthwhile research effort should be delayed solely by reason of unavailability of funds at the precise moment of need. When Dr. Harold L. Kern, Sc.D., moved to the ophthalmological department of Yeshiva University from another institution in 1963, the continuity of his work was threatened by a normal delay in transference of his National Institutes of Health grants to his new department. To meet this situation, RPB quickly approved an emergency grant of \$3,000, which permitted Dr. Kern to carry on his research without interruption.

MASSACHUSETTS EYE AND EAR INFIRMARY, Boston, Mass.

RPB received a contribution of \$1,000 in 1963 with a special request that it be used in research dealing with retinal hemorrhages such as those manifested in Eale's disease. The funds were applied to the work of Dr. Ephraim Friedman involving capillary circulation in the retina.

by special grants when quick action is essential.

CLOSING THE GAP IN EYE RESEARCH SPACE

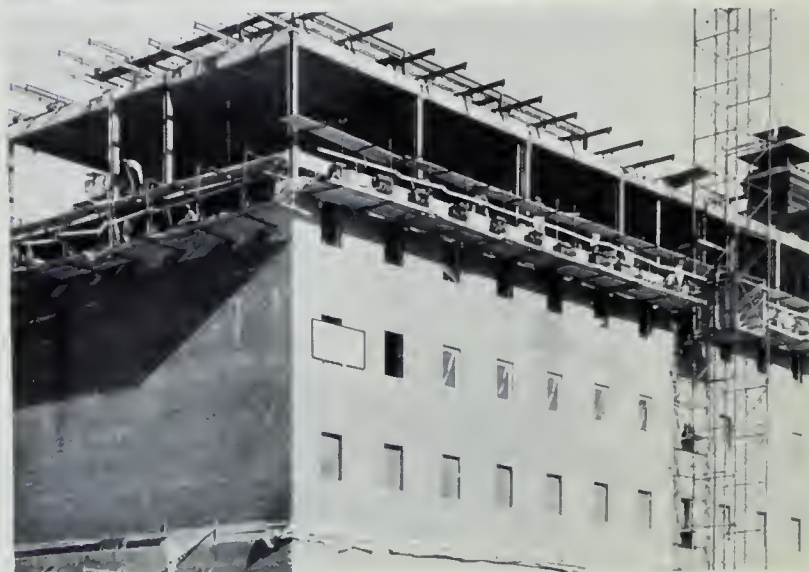
During 1963, RPB's unique concept of research space development was bringing two major eye research facilities into existence. Both will house far-reaching programs aimed at prevention of blindness through scientific research.

In Baltimore, construction of a new research building for the famed Wilmer Ophthalmological Institute at Johns Hopkins University was nearing completion, with dedication scheduled for May 25, 1964. The new building is the result of a pioneering venture in philanthropy—a unique partnership between a national voluntary foundation and a university—in which RPB initiated, financed and conducted an entire building campaign, instead of making a contribution in the traditional manner. The campaign resulted in voluntary gifts of more than \$980,000, all of which went directly to the university. These gifts made possible an additional grant of \$491,000 from the National Institutes of Health. Fund-raising costs, which were paid by RPB, totalled only \$24,889, demonstrating the economy and efficiency of its fund-raising concept.

In Los Angeles, RPB was applying the same principle in conducting and financing a campaign to build a \$4,950,000 comprehensive eye research center at the University of California, Los Angeles. Fund-raising costs for this campaign are estimated at \$60,000. As of the end of 1963, more than \$2,675,000 had been raised in voluntary gifts, and Federal and State grants totalling \$1,250,000 were assured. With approximately \$1,000,000 to be raised in 1964, ground-breaking has been scheduled for fall of that year. UCLA has directed that the center be named the Jules Stein Eye Institute in recognition of a personal gift of \$1,250,000 from Mr. & Mrs. Stein and their family. Mr. Stein is chairman of RPB's Board of Trustees.

Negotiations continued with other institutions for similar assistance in providing essential space in which all the weapons of modern science may be brought to bear upon the growing problem of blindness.

Setting a rapid pace in the development of essential eye research facilities, RPB has played a major role in the creation of two major centers where scientists will accelerate the fight against blinding diseases. At Johns Hopkins University, Baltimore, a new building (lower right) for the famed Wilmer Ophthalmological Institute is to be dedicated in May, 1964. At the University of California, Los Angeles, construction of the Jules Stein Eye Institute (architect's rendering, upper right) will begin in the fall of that year. RPB conducted and financed both building campaigns at a fund raising cost of 2 percent.



RPB develops laboratory space and facilities by underwriting and conducting building campaigns for eye research.

CLOSING THE GAP IN EYE RESEARCH MANPOWER

In RPB's efforts to build effective eye research programs across the nation it has emphasized that the actual work of research is carried out by *people*. One of the major gaps in the fight against blindness has been a continuing lack of trained minds and hands to lead the search into areas of medical science that can now be explored with modern techniques and equipment. RPB's unrestricted grants have been used by many institutions to train researchers, to encourage capable investigators to work in the field of ophthalmology and to stimulate the desire to build careers in ocular research. But still greater incentive is needed.

As an initial step in plans to develop an extensive program in support of career researchers in ophthalmology, RPB in 1963 began payment of its first in a series of research professorship grants. A five-year commitment of \$75,000 was made to Johns Hopkins University, and is being paid at the rate of \$15,000 a year, which permits the Wilmer Institute to add to its staff a young biologist who has already made significant impact upon the field of ophthalmological research. He is Dr. John E. Dowling, assistant professor of biology at Harvard University. Dr. Dowling will join the staff of the Wilmer Institute in the summer of 1964.

Additional professorship grants of this type are contemplated in 1964 and beyond, as RPB steps up its programs to close the gap in eye research manpower.



RPB's first Research Professorship Grant will make it possible for Dr. John E. Dowling (above) to join the staff of Johns Hopkins' Wilmer Institute in 1964 as Chief Investigator in Neurophysiology. The work of this outstanding young scientist will be conducted in laboratories at the new eye research building shown on the opposite page.

MAJOR CAUSES OF BLINDNESS IN THE UNITED STATES



Diseases of undetermined etiology: Cataract senile, Glaucoma, etc. 38%



General diseases: Diabetes, Vascular diseases, etc. 16%



Prenatal origin, cause unknown 9%



Cause undetermined or not specified 14%



Infectious diseases 10%



Injuries 5%



Poisoning 4%



Heredity 3%



Neoplasms 1%

Nearly all blindness is the result of diseases whose causes are unknown to science.

RPB builds manpower for eye research through research professorship awards.

CLOSING THE GAP IN COMMUNICATIONS

Men must communicate if worthwhile ideas are to take root and flourish. This is especially true in the world of medical science, where knowledge may alter the lives of millions of people. The scientist, busy in his laboratory, must be encouraged to keep open his lines of communication. In eye research especially, with limited funds available for such purposes, there has been insufficient opportunity for the exchange of information.

The survey initiated by RPB has itself contributed to better communications. It is bringing the field of eye research into clear focus, opening up this entire scientific area to professional and public discussion. Hopefully, it will point the way to techniques through which eye researchers may be brought into closer contact with one another, and with those who serve in other scientific disciplines closely related to their studies.

RPB's efforts to bridge the communications gap continued throughout 1963. Once again, a special grant of \$2,500 was made to Harvard University's Howe Laboratory of Ophthalmology to underwrite the cost of its National Conference on Ophthalmic Biochemistry, bringing together outstanding scientists in face-to-face informal discussions of ideas and findings that might be months or years away

from formal presentation or publication.

But the need for communication extends beyond the scientific community and into the public area, for a nation that is unaware of the seriousness of a health problem cannot act intelligently to meet it. In 1963, RPB stepped up its public information program by preparing a series of educational television announcements to be televised throughout the nation during 1964. An informative brochure, "Your Best Investment In Sight," was prepared for public distribution in connection with the TV project. In addition, many thousands of Optical Illusion—Eye Test Cards were being printed for distribution through the offices of practicing ophthalmologists and others who deal at first hand with the nation's eye problems.

A detailed brochure, "Programs and Procedures for Support of Eye Research," was prepared for distribution in early 1964 to research institutions, explaining the pioneering programs of RPB and pointing the way for expansion of efforts to discover and eradicate the causes of blindness.

The voice of RPB was being heard in 1963—and it was encouraging other voices to be raised in the interest of preserving the miracle of sight.

National Conference on Ophthalmic Biochemistry brings together some 50 leading scientists to discuss, interpret and analyze ongoing research. The intensive three-day conference, conducted by Harvard's Howe Laboratory, has been financed for the past three years through special grants from RPB. At far right, conferees take opportunity to continue informal discussions.



RPB promotes effective communication among scientists to expand and develop knowledge in eye research.



AN EYE TO THE FUTURE

Scientists believe that, with the knowledge gained through intensive research, ways can be found to prevent nearly all blindness...to eradicate blindness as a scourge of mankind. Until recent years eye research was sporadic and poorly supported. With increasing encouragement and support from both voluntary and government sources, the nation's research centers today have begun to give to ocular research the status, the stimulus and the support which it merits in view of the seriousness of the problem of blindness.

Looking to the men and women at work in eye research laboratories today, too often laboring under difficult conditions, it is possible to glimpse what the future may hold if their efforts are adequately supported. Through the perfection of a drug called IDU for use in the eye, one young research scientist has found an answer to the herpes simplex virus infection which has been a prominent cause of blindness in this nation. Once responsible for 8 out of 10 corneal transplants, the herpes infection is being controlled by IDU, saving an estimated 2,000 persons each year from the debilitating and blinding effects of this eye disease.

Today, the modern eye research laboratory is adapting computer techniques to complex basic and applied studies. Electronic computers are becoming an essential tool in measuring the rates of flow of fluid into and out of the eye, a key element in the search for knowledge of glaucoma, cataract and retinal diseases. They are being used to study currents generated in the brain when light enters the eye; to determine what happens in the visual pathways in the presence of strokes, brain tumors and other diseases; to measure how well light energy is being converted into nerve energy, and to study the brain currents which direct the work of the muscles that turn the eyes and synchronize their action.

The needle-thin laser beam is being harnessed to the needs of the eye surgeon and others engaged in the search for knowledge that will save sight.

Cryosurgery—a new development in eye surgery—is creating enormous interest, adapting freezing techniques to the delicate needs of the eye surgeon in dealing with glaucoma, cataracts and—most promising of all—the treatment of retinal detachments.

The effects of stress on the eyes are undergoing intensive study. These are especially significant in view of modern man's increasing encounters with conditions that differ from his normal environment—the low temperatures used in modern heart surgery, the high atmospheric pressures employed in lung surgery, the extremes of temperature and oxygen pressures to which aviators and astronauts are being exposed.

Diagnostic techniques for eye diseases are being perfected. For instance, hitherto unobservable changes in the retina, or the back of the eye, can now be studied by the introduction of dyes which circulate through the blood vessels.

Exciting new advances in the transplanting of corneas are taking place. Plastic corneas are being perfected which hopefully may soon be employed where standard transplants have failed.

A vaccine is being tested to prevent trachoma—the world's leading cause of blindness.

But eye research has implications far beyond the phenomenon called sight. Increasingly, the study of the eye is involving a host of seemingly diverse scientific disciplines, drawing knowledge from them and contributing knowledge to them.

Studies of the chemical composition of the lens in fishes and lower animals are leading to new knowledge of evolutionary relationships in nature. Here the immunologist and the biochemist working in ophthalmic research are serving the needs of the biologist.

Explosive advances in the fields of experimental genetics, immunochemistry, nuclear physics, experimental psychology and many other fields all have important impact upon studies of the visual system, increasing man's knowledge, increasing his potential for conquering blindness.

What the future may bring—and how soon—depends upon the amount of time, effort and money invested in the work of the dedicated people in the nation's laboratories who have too long labored without recognition or support.

In working to close the gaps in eye research—the gaps in laboratory space, in equipment, in men, in money—RPB faces a challenging future. But no matter how great the challenge, no matter how huge the financial goal, to those who consider the toll of blindness on humanity, on human happiness and productivity, the end will more than justify the tremendous effort. The end, of course, is the eradication of blindness...the assurance of the blessings of sight for all mankind.

RPB creates public awareness of the need for expanded eye research in the fight against blindness.

REPORT OF THE TREASURER

Through the continued application of imaginative and sound business management practices, RPB has made steady advances in stimulating eye research by helping provide desperately needed men, space, equipment and funds.

During 1963 RPB started releasing funds for its first eye research professorship, added four new unrestricted grantees and pushed forward a new campaign to provide additional research facilities.

Unlike many voluntary foundations which strive to have all funds contributed directly to their organization for subsequent distribution in support of research, RPB has successfully pursued the role of a catalyst by encouraging contributors to give directly to eye research institutions rather than to the organization itself. Attention is called to the special notes to the Financial Statements, with particular reference to Note #1 which indicates that RPB's campaign for UCLA has produced more than \$2,675,000 from private sources as of December 31, 1963. The campaign which is now well underway has been conducted at a cost thus far to RPB of approximately 2% of the funds raised.

The UCLA campaign is a perfect example of RPB's catalytic action. Many of RPB's most generous contributors have redirected their financial support to UCLA, at least for the time being, as a means of honoring RPB's board chairman, Mr. Jules Stein, after whom the University has decided to name the new eye institute.

Although this building project has diverted several substantial gifts from RPB, the number of smaller gifts from interested persons in every section of the country has commenced to increase rapidly as they learn of RPB's pioneering eye research program. The growing interest and financial support received from ophthalmologists is particularly heartwarming.

Since RPB's Trustees have pledged to meet the organization's operating costs through their own con-

tributions, other donors may be assured that their gifts and grants to the organization will be devoted entirely for research and research training purposes.

Over the past three and one-half years, the Trustees have given or pledged \$1,374,990 directly to RPB in addition to generously volunteering their time and effort on the organization's behalf.

It is expected that the distribution in early 1964 of a grants and procedures brochure to medical research institutions will generate an increased number of grant requests. On December 10, 1963, the Trustees formally adopted the budget for the calendar year 1964.

1964 Budget of Expenditures or Commitments

Research grants and other program expenditures or commitments:

Unrestricted grants to the ophthalmologic departments of medical schools or other research institutions	\$150,000
Research professorships and career investigators (anticipated to be paid in installments commencing in the year each grant is made)	375,000
Research laboratory construction campaign expenses to provide new facilities at eye research centers	100,000
Survey of research needs	85,400
Public information program	31,600
Emergency-Special grants	12,000
Total grant and program expenditures and commitments	\$754,000

Operating expenditures:

Staff salaries	\$ 40,200
Consultants' services	23,000
Office equipment	3,000
General administrative expenses.....	18,555
Contingencies	4,000
Total operating expenditures.....	<u>\$ 88,755</u>
Total planned expenditures and commitments	<u>\$842,755</u>

Note: Functional allocation of operating expenditures to program activities will be made on time basis at end of year.

RPB's accounting records have been set up in a form suggested by the National Health Council and have been prepared in a manner which allows the organization to report fully and understandably to the public. This report includes a comparative statement of operations (income and expense) for the years 1963 and 1962, and a statement of financial position (assets and liabilities) as of December 31, 1963. The opinion of Price Waterhouse & Co. on the statements for 1963 is included.

The following unpaid pledges are not reflected in financial statements as of December 31, 1963:

Pledges due in:

1964	\$229,341
1965	123,592
1966	10,575
1967	150
	<u>\$363,658</u>

Pledges of support over three to five-year periods are encouraged as an important aid to assist in program planning for the future.

JAMES S. ADAMS
Treasurer

RPB's operating costs are paid through Trustee contributions, freeing all other gifts for research purposes.

RESEARCH TO PREVENT BLINDNESS, INC.

STATEMENT OF FINANCIAL POSITION—DECEMBER 31, 1963

Assets:	
Cash:	
Checking accounts	\$ 14,999
Interest-bearing accounts	886,493
Securities:	
Donated, at market value on date of gift—	
MCA Inc. common stock—9,215 shares	
(Note 2) (quoted market at December 31, 1963—	
\$499,914)	\$ 614,587
Other securities (quoted market at December 31,	
1963—\$37,969)	37,129
Purchased, at cost (quoted market at December 31,	
1963—\$6,265)	8,645
	<u>660,361</u>
Less—Reserve to reduce securities to quoted market at	
December 31, 1963	<u>116,213</u>
	544,148
Deferred charges and other assets	925
	<u>1,446,565</u>
Liabilities:	
Accounts payable	1,021
Professorship grant (payable in annual instalments through 1967)	60,000
	<u>61,021</u>
Net assets (Note 2)	<u>\$1,385,544</u>
Represented by:	
Funds budgeted for 1964 expenditures or commitments	\$ 842,755
Net assets remaining for appropriation	542,789
	<u>\$1,385,544</u>

OPINION OF INDEPENDENT ACCOUNTANTS

To the Board of Trustees
Research to Prevent Blindness, Inc.

In our opinion, the accompanying statements present fairly the financial position of Research to Prevent Blindness, Inc. at December 31, 1963 and its income and expenses for the year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Our examination of these statements was made in accordance with generally accepted auditing stand-

ards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances, including confirmation of the cash and securities owned at December 31, 1963 by correspondence with the depositories. It was impracticable for us to extend our examination of donations received beyond accounting for amounts so recorded.

PRICE WATERHOUSE & Co.

March 10, 1964
New York, N. Y.

STATEMENT OF OPERATIONS

	Year ended December 31,	
	1963	1962
Income:		
Donations:		
Securities, at market value on date of gift	\$ 120,163	\$ 482,747
Cash	71,317	166,742
Jewelry and other items, at amounts realized	1,262	
	<u>192,742</u>	<u>649,489</u>
Interest and dividends	31,183	21,318
Special event		45,483
	<u>223,925</u>	<u>716,290</u>
Program grants and expenditures:		
Research—awards and grants to medical schools and		
other institutions	136,500	215,241
Cost of raising funds for new eye research buildings (Note		
1)—for the Johns Hopkins University Medical School		
and the University of California, Los Angeles Medical		
School	50,331	10,197
National eye research survey—to determine and promul-		
gate present status, needs and potentialities of eye re-		
search in the United States	36,503	10,772
Program development—to stimulate research laboratory		
expansion programs, additional research professorships		
and ophthalmological research in general	16,497	17,898
	<u>239,831</u>	<u>254,108</u>
Expenses:		
Public information	33,419	11,065
Fund raising	5,161	4,328
Administration	34,114	29,260
	<u>72,694</u>	<u>44,653</u>
Securities adjustments:		
Loss on sales of donated securities	105,625	
Provision in 1962 to reduce securities to quoted market		
(less portion no longer required in 1963)	(217,663)	333,876
	<u>(112,038)</u>	<u>333,876</u>
Excess of income over expenses and deductions	23,438	83,653
Net assets at beginning of year	1,362,106	1,278,453
Net assets at end of year	<u>\$1,385,544</u>	<u>\$1,362,106</u>

NOTES TO FINANCIAL STATEMENTS

NOTE 1: Contributions resulting from fund-raising campaigns conducted by Research to Prevent Blindness, Inc. were made directly to the Johns Hopkins University for the Wilmer Ophthalmological Institute Building Fund and to the University of California, Los Angeles for the Jules Stein Eye Institute Building Fund. The two universities report that contributions and pledges in excess of \$980,000 and \$2,675,000, respectively, had been received from inception of the program to December 31, 1963.

NOTE 2: Substantially all of the MCA Inc. common stock held by Research to Prevent Blindness, Inc. can be transferred or hypothecated only if registered under the Securities Act of 1933, as amended, or as is otherwise provided by law.



RPB Board of Trustees Meeting. Left to right, seated: William C. Conner, Robert E. McCormick, Jules C. Stein, Mrs. Albert D. Lasker and Willard W. Keith. Standing: William J. vanden Heuvel and James S. Adams. Not pictured: Lew R. Wasserman.

OFFICERS AND TRUSTEES

JULES C. STEIN, *Chairman*
Chairman of the Board, MCA Inc., and former practicing Ophthalmologist

ROBERT E. MCCORMICK, *President*
Attorney, former corporate officer
Olin Mathieson Chemical Corp.

MRS. ALBERT D. LASKER, *Vice President*
President, Albert and Mary Lasker Foundation

LEW R. WASSERMAN, *Vice President*
President, MCA Inc.

JAMES S. ADAMS, *Treasurer*
General partner, Lazard Freres & Co.

WILLIAM C. CONNER,
President, Alcon Laboratories, Inc.

WILLARD W. KEITH,
Chairman, Marsh & McLennan, Inc. of California

WILLIAM J. VANDEN HEUVEL,
Secretary and Counsel
Has been serving as Special Assistant
to the Attorney General of the United States.

Members of RPB's Board of Trustees not only serve without compensation, but have contributed generously to the financial support of the organization and its programs.

SCIENTIFIC ADVISORY PANEL

FRANCIS HEED ADLER, M.D.
Professor Emeritus, University of Pennsylvania Medical School

EDWARD W. DEMPSEY, PH.D.
Dean, Washington University Medical School, St. Louis

SIDNEY FARBER, M.D.
Professor of Pathology,
Harvard Medical School

E. CUYLER HAMMOND, Sc.D.
Director, Statistical Research Section,
American Cancer Society

H. K. HARTLINE, M.D.
Rockefeller Institute of Medical Research

RICHARD MASLAND, M.D.
Director, National Institute of Neurological Diseases and Blindness

A. EDWARD MAUMENEE, M.D.
Director, Wilmer Ophthalmological Institute,
Johns Hopkins Medical Institutions

WILLIAM C. H. PRENTICE, PH.D.
President, Wheaton College

EDWARD TATUM, PH.D.
Nobel Laureate, Rockefeller Institute of Medical Research

GEORGE WALD, PH.D.
Professor of Biology, Harvard University



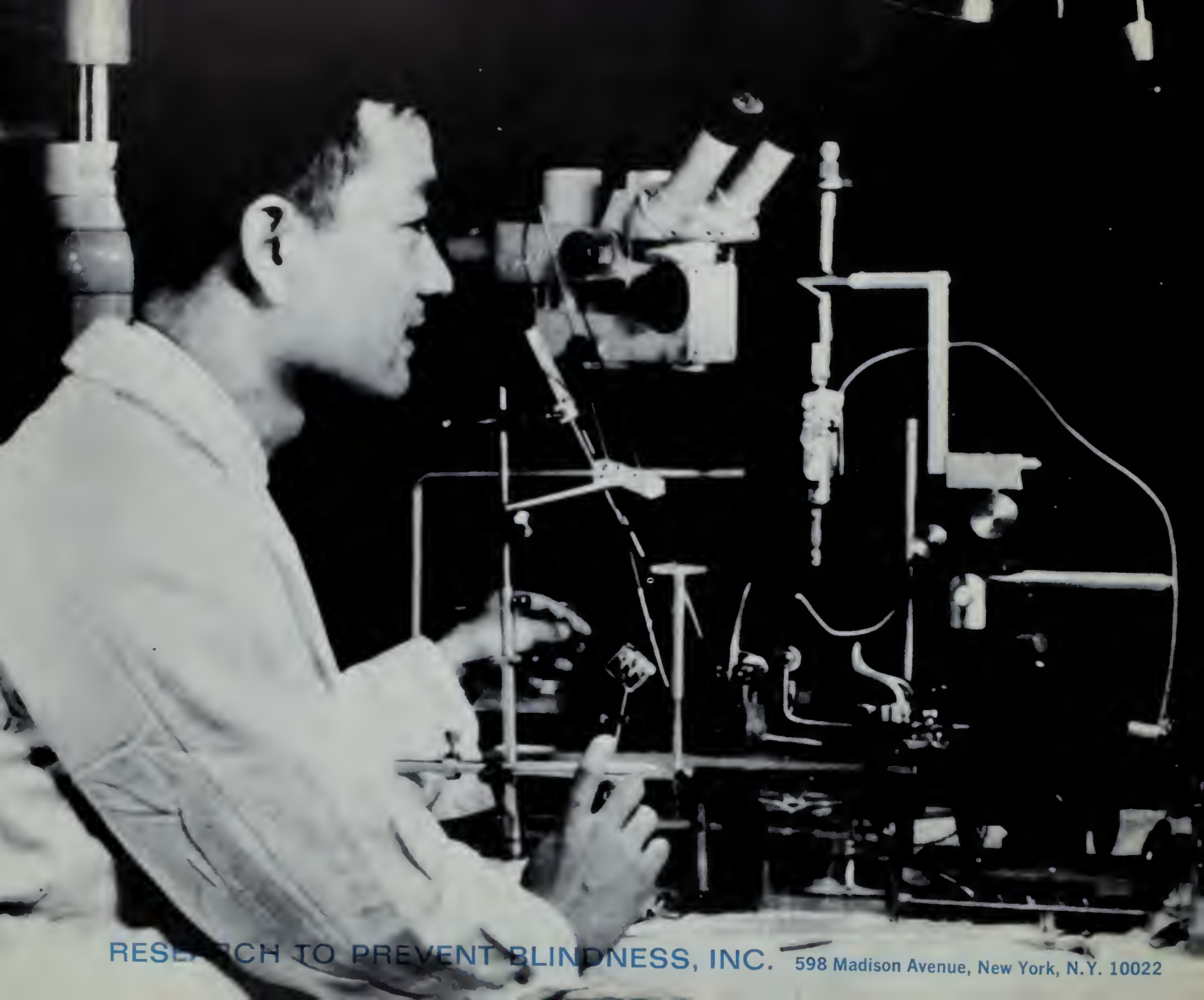
RPB Scientific Advisory Panel in session. Left to right, seated: Drs. Masland, Adler, Hartline and Tatum. Standing: Drs. Maumenee, Dempsey and Prentice. Drs. Wald, Hammond and Farber do not appear in the photo.

BEQUESTS to RPB are especially welcome as a means of assuring the continuity and stability of research programs. The proper form for such bequests is:

WILL AND BEQUEST to Research to Prevent Blindness, Inc. of 598 Madison Avenue, New York City, a membership corporation organized under the laws of the State of New York, for its corporate purposes, the sum of dollars."

DAVID F. WEEKS, *Executive Director* / MEFFORD R. RUNYON, *Vice President for Planning* / ALBERT V. BURNS, *Public Information Director*
DR. C. J. VAN SLYKE, *Scientific Director* / DR. THOMAS D. DUANE, *Research Study Director*

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RESEARCH TO PREVENT BLINDNESS, INC. 598 Madison Avenue, New York, N.Y. 10022